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ABSTRACT

Changes in the academic and social self-concept and the civic and business orientations of students who attended different types of institutions were studied longitudinally. Data were obtained from a Cooperative Institutional Research Program survey of 4,621 freshmen entering college in 1971 and a followup of those students graduating in 1980. Based on multivariate analysis of covariance, including separate analyses for males and females, it was found that different types of institutions have a differential effect on the developmental patterns of college graduates, and males more than females were affected by the type of postsecondary institution. Analyses suggest that male graduates of major research universities exhibit less growth in terms of academic and social self-concept and community orientation than their peers at the four other types of postsecondary institutions, while female graduates of comprehensive colleges and universities and general liberal arts colleges exhibit less growth in business orientation than those attending other types of postsecondary institutions. Descriptions are included of the five types of postsecondary institutions: doctoral-granting universities, major research universities, comprehensive colleges/universities, selective liberal arts colleges, and general liberal arts colleges. (SW)

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BACCALAUREATE RECIPIENTS: VARIATIONS IN ACADEMIC ABILITY, PERSONAL VALUES, AND EARLY CAREER SATISFACTION

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BACCALAUREATE RECIPIENTS: VARIATIONS IN ACADEMIC ABILITY, PERSONAL VALUES, AND EARLY CAREER SATISFACTION

Abstract

While there is abundant evidence suggesting that the collegiate experience enhances the cognitive, personal, and career development of students, much of this evidence is based on the findings of studies that are (1) beset with serious methodological limitations and (2) mask wide variation in the developmental patterns of students who attend different types of institutions. Critical reviews of the extant literature commonly urge that attention be devoted to correcting such methodological deficiencies (Astin, 1977; Bowen, 1977; Pascarella, in press). This study demonstrated pre-college and post-college differences in the personal and career developmental patterns of five groups of college graduates based upon the type of institution in which they began their undergraduate preparation. Research which has shown broad differences in the developmental patterns of male and female college students was supported.

BACCALAUREATE RECIPIENTS: VARIATIONS IN ACADEMIC ABILITY, PERSONAL VALUES, AND EARLY CAREER SATISFACTION

The cultivation of students' self-concept and their civic and business orientations are commonly accepted goals of most colleges and universities and represent an established area of inquiry for over five decades of research on the "effects" of postsecondary education. Exhaustive critiques of this massive literature, while acknowledging methodological shortcomings, tend to support the general conclusion that involvement in postsecondary education is related to the development of a more positive self-concept, to the strengthening of civic orientations, and to a modest reduction in business/career orientations (see, for example, Corey, 1936; Strang, 1937; Bloom and Webster, 1960; Feldman and Newcomb, 1969; Bowen, 1977). These general findings were confirmed in Astin's (1977) study of the developmental patterns of over 200,000 college students and in Smart, McLaughlin, and Ethington's (1985) recent study of the developmental patterns of over 10,000 high school graduates who had varying levels of exposure to collegiate settings.

The extent to which these general findings is equally applicable to graduates of different types of postsecondary institutions and to male and female graduates is less certain and remains an open question. The degree to which student developmental patterns vary in relation to the type of institution they attend has acquired heightened attention as regional and professional accrediting agencies evidence greater interest in measures of educational outcomes and as institutions seek to attract students in an increasingly competitive environment (Birnbaum, 1983; Corson, 1975). Increasingly, questions are being raised about the "effects" of student attendance at various types of colleges and universities. Similarly, potential differences in the developmental patterns of male and female college graduates have

acquired greater attention in recent years given burgeoning female college enrollments throughout the past decade (Astin, King, and Richardson, 1978; Astin and Kent, 1983). Bowen (1977), for example, concluded that the collegiate experience tends to reduce initial personality differences between the sexes, while Astin (1977) found that gender based personality differences persist throughout the four years following matriculation.

This paper presents the findings of a longitudinal analysis of changes in the academic and social self-concept and the civic and business orientations of college graduates. The primary purposes of the study were to determine if these changes were consistent for (a) graduates of different types of postsecondary institutions and (b) for males and females.

Research Procedures

Sample

Data for this study were obtained from the 1971 Cooperative Institutional Research Program (CIRP) survey of freshmen attending 487 U. S. colleges and universities. The total sample for this study consisted of all students (n = 4,621) who completed the initial survey upon entering college in the fall of 1971 and a subsequent follow-up survey in 1980. The sample was restricted to only those who were U. S. citizens, who attended a single undergraduate institution, and who earned at least a bachelor's degree by 1980.

Variables

The scales measuring respondents' academic and social self-concept and their civic and business orientations were constructed from identically worded items in the 1971 and 1980 CIRP surveys. Scales measuring the family socioeconomic status and the

high school academic achievement of respondents were constructed from items in the 1971 CIRP survey. Table 1 presents a complete description of all scales included in this study and their respective reliability estimates.

Insert Table 1 about here.

Respondents' gender and the type of postsecondary institution from which they received their baccalaureate were also obtained from the 1971 CIRP survey. A fivefold typology of postsecondary institutions was used based upon a modification of the original classification system proposed by the Carnegie Commission on Higher Education (1971). This fivefold typology is presented in Table 2.

Insert Table 2 about here.

Analyses

A 5 X 2 repeated measures multivariate analysis of covariance (MANCOVA) design was used to analyze the data. Separate analyses were performed for males (n = 2,065) and females (n = 2,556). The independent variables were postsecondary institution type (see the fivefold classification in Table 2) and time, the repeated measure (1971, 1980). The covariates were the family socio-economic status and high school academic achievement of respondents (see Table 1). The dependent variables were the academic and social self-concept and the civic and business orientation scale scores

of respondents for each of the two points in time in the repeated measures design (see Table 1).

Results

The multivariate test of the within cells regression effect was significant for both males ($F = 118.55$, $df = 8/4108$, $p < .001$) and females ($F = 135.26$, $df = 8/5090$, $p < .001$). Respondents' scores on the dependent variables were then adjusted using the unstandardized regression coefficients presented in Table 3 to control for variation associated with the covariates. The resulting adjusted mean scores for the dependent variables represent the scores that would be expected or predicted for each group if the covariate means for the group were the same as the grand mean for each covariate (Huitema, 1980).

Insert Table 3 about here.

The overall MANCOVA results for each sex are presented in Table 4 and indicate that both main effects of Time and Carnegie and the interaction term of Time x Carnegie are statistically significant for males and females. The significant interaction term is especially important since it indicates that changes in respondents' scores on the dependent variables over time (i. e., from 1971 to 1980) varies across the five types of postsecondary institutions.

Insert Table 4 about here.

However, both the magnitude of the interaction term and the contribution of the individual dependent variables to its overall significance is considerably different for males and females. This may be seen from inspection of Table 5 which presents the adjusted means for males and females on the dependent variable and the relative contribution (i.e., F-value) of the respective dependent variables to the significant interaction term for each sex.

Insert Table 5 about here.

In general, the interaction term (see Table 4) is more significant for males ($F = 3.06$, $df = 16/8222$, $p < .001$) than females ($F = 1.91$, $df = 16/10186$, $p < .02$) and the relative contribution of the dependent variables is decidedly different for males and females (see Table 5). The former indicates that the specific type of postsecondary institution attended has a greater "impact" on the developmental patterns of males than females. The latter indicates that the nature of that "impact" is different for men and women. For example, the academic self-concept, social self-concept, and community orientation scales contribute significantly to the interaction term for males, while only the business orientation scale contributes significantly to the female interaction term. Inspection of the adjusted group means in Table 5 suggest that male graduates of major research universities exhibit less growth in terms of

academic and social self-concept and community orientation than their peers at the four other types of postsecondary institutions, while female graduates of comprehensive colleges and universities and general liberal arts colleges exhibit less growth in business orientation than those attending other types of postsecondary institutions.

Discussion

The results of this study indicate that different types of postsecondary institutions have a differential "effect" on the developmental patterns of college graduates. Perhaps more important, however, is the finding that the magnitude and nature of the "effect" is different for males and females. For males, the overall differential "effect" results primarily from the less complete developmental pattern of major research university graduates on the academic and social self-concept and the civic orientation scales. This finding may in part be due to a "ceiling effect" on the measures since males attending major research universities had the highest scores on both self-concept measures and the second highest score on the civic orientation scale at the time of their initial matriculation in 1971. At the same time, Academic Self Concept, the relatively highest score, had a mean 1.5 deviation below the maximum of 5.0. The magnitude of the change in the scores of graduates from the four other types of postsecondary institutions on these three scales was essentially similar.

The results for females were different in both magnitude and nature. Overall, the developmental pattern of females between 1971 and 1980 appears less related to the type of undergraduate institution attended, as evidenced by the lower significance of the interaction term in the analysis and the fact that only one of the four dependent variables contributed in a significant manner to the explanation of the

interaction term (i. e., business orientation). Female graduates of comprehensive colleges and universities and general liberal arts colleges exhibited less growth in business orientation than their peers who graduated from the three other institutional types.

These general findings emphasize the need for constant attention to gender differences in research on the "effects" of colleges and universities on students. Males and females arrive on college campuses with different self-concepts and orientations, and changes in their developmental patterns during the collegiate experience appear to be quite different. The findings of this study and those reported by Smart, McLaughlin and Ethington (1985) and Smart and Pascarella (1985) suggest that the collegiate experience does little to diminish gender differences at the time of initial matriculation.

While statistically significant for both males and females, the overall differential "effect" of the graduation from different types of colleges and universities was, in absolute terms, of modest magnitude. They accounted for less than 1% of the generalized variation within subject (trace, SSCP) while Time accounted for about 13%. The findings by no means support the contention that different types of postsecondary institutions have dramatically different "effects" on the developmental patterns of their graduates. This absence of clearly observable institutional differentiation may be attributed in part to the increasing similarity of different types of postsecondary institutions noted by Birnbaum (1983), Newman (1971), Stradtman (1980), and others. Yet these same contemporary observers of American higher education note that the increasing size and comprehensive character of most colleges and universities has contributed to the dramatic increase in the diversity <u>within</u> individual institutions. This possibility suggests that efforts to assess the differential patterns of student development during the college years might profit from examination of within-campus sources of variation. One such source is the academic major of stu-

dents, and recent research by Smart (1985) reports that the differential developmental pattern of students during the college years is more strongly related to the general nature of their academic major than to the specific type of institution they attend.

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Table 1

Scale Definitions and Reliabilities

Scales	Definitions and Reliabilities
Academic self-concept (1971 & 1980)	A three-item scale comprised of self-ratings of academic and mathematical ability and intellectual self-confidence (.66,.62)
Social self-concept (1971 & 1980)	A five-item scale comprised of self-ratings of leadership and public speaking ability, general popularity, popularity with the opposite sex, and social self-confidence (.78,.80)
Community orientation (1971 & 1980)	A five-item scale comprised of the relative importance of influencing the political structure and social values, helping others who are in difficulty, and participating in community action and environmental programs (.74,.73)
Business orientation (1971 & 1980)	A two-item scale comprised of the relative importance of being successful in a business of my own and being very well-off financially (.54,.45)
Socioeconomic status (1971)	A three-item scale comprised of mother's and father's educational level and family income (.69)
High school academic achievements (1971)	A two-item scale comprised of self-reported high school grades and class rank (.78)

Table 2

Description of Institutional Typology

Institutional Type	Description
Major research universities	The 100 leading universities receiving federal financial support and awarding at least 50 Ph.D.'s annually (e.g., Princeton University, University of Minnesota, University of Oregon)
Doctoral-granting universities	Universities awarding at least 10 Ph.D.'s annually (e.g., Clemson University, Dartmouth College, University of Houston)
Comprehensive colleges & universities	Institutions enrolling at least 2,000 students, offering comprehensive academic programs, with at least one professional or occupational program (e.g., Boston State College, Marshall University, Tuskegee Institute)
Selective Liberal arts colleges	Those included among the 200 leading baccalaureate-granting colleges whose graduates received Ph.D.'s at 40 leading doctoral-granting universities from 1920-1960 and scored five or above on Astin's (1971) selectivity index (e.g., Amherst College, Bowdoin College, Mills College)
General liberal arts colleges	All other liberal arts colleges not included in the preceding category (e.g., Alma College, Marist College, Linfield College)

Table 3

Unstandardized and Standardized
Regression Coefficients

Dependent Variables	Regression Coefficients[a]			
	Socioeconomic status		Academic achievements	
	Males	Females	Males	Females
Academic Self-concept	.05** (.13)	.04** (.11)	.22** (.52)	.22** (.49)
Social self-concept	.03** (.08)	.04** (.11)	.01 (.03)	-.01 (-.01)
Civic orientation	-.02* (-.06)	.00 (-.01)	-.01 (-.03)	-.02* (-.06)
Business orientation	.00 (-.01)	-.03* (-.08)	-.09** (-.18)	-.08** (-.17)

[a]Standardized coefficients are in parentheses

*p<.01

**p<.001

Table 4

Overall MANCOVA results for Males and Females

Source	Males			Females		
	Degrees of Freedom			Degrees of Freedom		
	Hypothesis	Error	F-ratio	Hypothesis	Error	F-ratio
Between subjects:						
Institutional type	16	8214	5.38[a]	16	10178	2.33[b]
Within subjects:						
Time	4	2057	321.36[a]	4	2548	324.67[a]
Interaction term:						
Institutional type x time	16	8222	3.06[a]	16	10186	1.91[c]

[a] $p < .001$
[b] $p < .01$
[c] $p < .02$

Table 5

Group Means for Dependent Variables[a] and Covariates

Variables	Major Research		Doctoral-Granting		Comprehensive		Selective Liberal Arts		General Liberal Arts	
	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females
Academic self-concept:[b]										
1971	3.42	3.08	3.22	3.04	3.14	2.95	3.21	3.06	3.16	2.97
1980	3.62	3.28	3.56	3.26	3.52	3.24	3.50	3.31	3.49	3.25
Social self-concept:[b]										
1971	3.33	3.14	3.22	3.11	3.15	3.07	3.19	3.08	3.17	3.06
1980	3.38	3.47	3.67	3.48	3.62	3.43	3.63	3.47	3.59	3.42
Civic orientation:[c]										
1971	2.39	2.41	2.38	2.36	2.33	2.38	2.43	2.39	2.38	2.39
1980	2.36	2.43	2.43	2.47	2.40	2.40	2.45	2.44	2.47	2.46
Business orientation:[c]										
1971	2.53	2.22	2.60	2.16	2.63	2.16	2.46	2.10	2.47	2.14
1980	2.57	2.44	2.67	2.36	2.58	2.28	2.50	2.34	2.41	2.23
Socioeconomic status:[d]										
1971	4.74	4.65	4.28	4.40	4.05	4.06	5.15	5.10	4.26	4.24
Academic achievements:[d]										
1971	6.84	7.08	6.31	6.51	5.95	6.32	6.62	6.94	5.73	6.36

[a]Adjusted group means
[b]Scored 1 (low) to 5 (high)
[c]Scored 1 (low) to 4 (high)
[d]Scored 1 (low) to 8 (high)